

REMARKS

The amendments above together with the comments that follow are presented in a bona fide effort to address all issues raised in the Office Action of September 2, 2005 and place this case in condition for allowance. Claims 1-17 were pending in this application. Claim 16 has been withdrawn pursuant to 35 U.S.C. § 121 and now been cancelled.

In response to the Office Action dated September 2, 2005, claims 9, 13 and 16 have been canceled and claims 1, 12 and 14 have been amended. Care has been exercised to avoid the introduction of new matter. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, the depicted embodiments and related discussion thereof in the written description of the specification.

Applicants submit that the present Amendment places the application in condition for allowance and does not generate any new matter issue or any new issue requiring any further search and/or consideration. Accordingly, entry of the Amendment and prompt favorable reconsideration pursuant to 37 C.F.R. § 1.116 are respectfully requested.

Applicants acknowledge, with appreciation, Examiner Talbot's courtesy and professionalism in conducting a telephonic interview on January 31, 2006, during which the Advisory Action (January 20, 2006) and the present Amendment were discussed. It is Applicants' understanding that the present Amendment would place this application in condition for allowance. The subject matter of dependent claims 9 and 13 have been added to independent claims 1 and 12, respectively. Independent claims 1 and 12 now recite, in pertinent part, the pressure of the magnesium vapor.

On December 30, 2005, Applicants submitted an executed Declaration under 37 C.F.R. 1.132 by Zi-Kui Liu, a co-inventor of the present application. As stated in the Declaration, as well as described in the detailed description of the present specification, at page 6, line 27 through page 7, line 8, the upper and lower limits in which magnesium vapor can be stably in contact with silicon can be calculated using the equation of the presently claimed subject matter. As shown in FIG. 1, the upper line in the region "gas+Si" can be approximated by $\text{Log}(P) = -9549.5/T + 9.1$; and the lower line can be approximated by the equation $\text{Log}(P) = -10142/T + 8.562$, where P represents pressure in units of Torr and T represents temperature in Kelvin (K). Maintaining magnesium vapor pressure at a magnesium partial pressure in a reaction chamber within about the range defined by the above equations, permits magnesium vapor to interact and react with the boron precursor and minimizes, if not completely eliminates, any reaction between magnesium and silicon. By this process, a magnesium boride film can be formed directly on silicon without substantial amounts of magnesium-silicon contaminants between the substrate surface and the magnesium boride film. Each of independent claims 1, 12 and 17 recites, in pertinent part, the magnesium vapor pressure.

In conclusion, none of the applied references provide any teaching or suggestion that the claimed vapor pressure can vary from the disclosed values and the prior art does not provide one having ordinary skill in the art a reason to vary the vapor pressure in one direction or another to produce an expected desirable result.

It is believed that all pending claims are now in condition for allowance. Applicants therefore respectfully request an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an

10/784,899

Examiner's amendment, the Examiner is invited to call Applicants' representative at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



Brian K. Seidleck
Registration No. 51,321

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BKS:idw
Facsimile: 202.756.8087
Date: January 31, 2006

**Please recognize our Customer No. 20277
as our correspondence address.**